In-Delta Storage Program
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Operations for Water Supply, Water Quality and Environmental Needs

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Presentation Outline

- Sample Operational Scenarios
- Regulations and Constraints
- Webb Tract Permitted Diversions and Releases
- Bacon Island Permitted Diversions and Releases
- Potential Water Supply Benefits
- Unquantified Benefits
- Reliability and Uncertainty Evaluations
- Summary

Sample Operational Scenarios

- No Action Base Operations
- Sample Scenario 2
  - Water Supply
- Sample Scenario 3
  - Water Supply
  - Environmental Water Account
- Sample Scenario 4
  - Water Supply
  - Environmental Water Account
  - Ecosystem Restoration Program

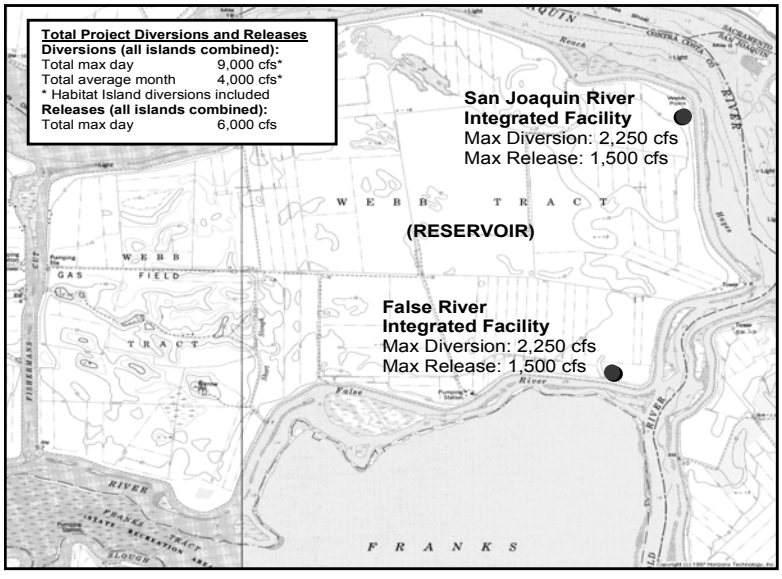
Regulations and Constraints

- No Action Base Operations
  - SWRCB Water Quality Control Plan (D1641)
  - Revised Fish Criteria as used in South Delta Program
- Sample Scenario 2 – Water Supply
  - All No Action Base Operations Requirements
  - SWRCB Permit Requirements for Delta Wetlands (Decision 1643)
  - CUWA, CCWD and EBMUD Settlement Agreements
  - Biological Opinions
  - CVPIA level 4 refuge demands in addition to level 2 refuges
  - Groundwater surface water conjunctive use.

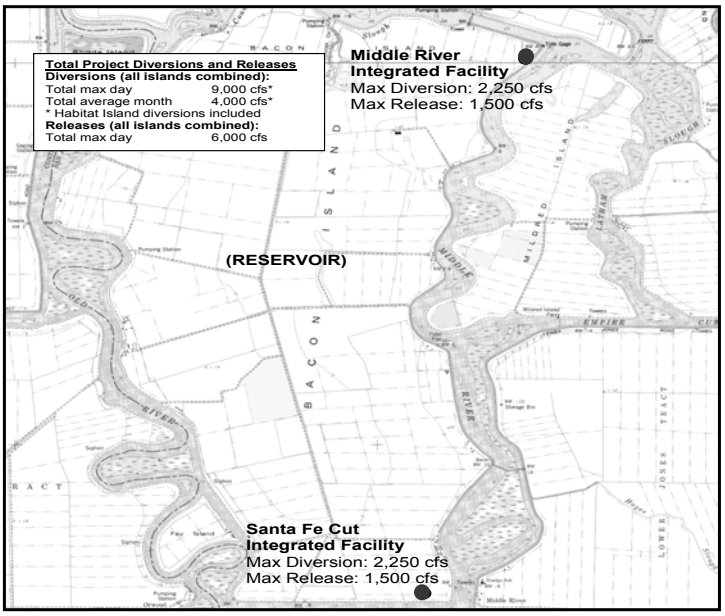
Regulations and Constraints (Cont.)

- Sample Scenario 3 – Water Supply and EWA
  - All Sample Scenario 2 Requirements
  - EWA Transfers to San Luis Reservoir
- Sample Scenario 4 – Water Supply, EWA and ERP
  - All Sample Scenario 3 Requirements
  - Ecosystem Restoration Program releases in March, April and May for increase in Delta outflows

Webb Tract Permitted Diversions and Releases



Bacon Island Permitted Diversions and Releases



Potential Water Supply Benefits

Benefit Category	Sample Scenario 2 Water Supply (D1641 & D1643) Annual Improvement (TAF)		Sample Scenario 3 Water Supply/EWA (D1641 & D1643) Annual Improvement (TAF)		Sample Scenario 4 Water Supply/EWA/ERP (D1641 & D1643) Annual Improvement (TAF)	
	Dry Period	Long-term	Dry Period	Long-term	Dry Period	Long-term
Urban Supply	35.3	43.0	31.6	45.4	20.4	32.3
Agricultural Supply	20.5	66.3	15.9	41.6	12.5	39.6
EWA	--	--	10.3	31.2	9.7	36.7
ERP	--	--	--	--	14.9	15.7
CVPIA Level 4 refuge supply	5.5	14.6	3.4	11.0	3.4	11.7
Total Water Supply Benefits (TAF)	**61.3**	**123.9**	**61.2**	**129.2**	**60.9**	**136.0**

Unquantified Benefits

- Operational Flexibility
  - Contribution to Delta Requirements (D1641)
  - System-wide Carryover Storage
- Water Quality Improvements
- Wildlife and Aquatic Habitat Improvements
- Storage for Water Transfers
- Flood Damage Reduction
- Recreational Opportunities

Reliability and Uncertainty Evaluations

- Water Quality
  - Organic Carbon Operational Studies
    - Organic Carbon Constraints Applied (20 TAF Average Annual Impact on Yield)
    - Organic Carbon Constraints Applied and Dilution through Circulation Allowed (10 TAF Annual Average Impact on Yield)
  - Evaluations for Water Quality constituents
    - DOC (mg/L) at Urban Intakes
    - Chloride (mg/L) at Urban Intakes
    - TTHM (ug/L) at Urban Intakes
    - Bromate (ug/L) at Urban Intakes

Reliability and Uncertainty Evaluations (Cont.)

- DO and Temperature Studies
- Reservoir Stratification Studies
- Fish and Aquatic Habitat Protections
- Climate Change Impact
- Coordination with Los Vaqueros Expanded Reservoir
- Impact of D1643 on In-Delta Storage Operations

Summary

- Due to Project's strategic location in the Delta, Project would provide significant operational flexibility to meet varied needs.
- EWA studies show that Project could provide water needed to support the EWA program, enhancing the EWA ability to respond to real-time fisheries needs and reduce EWA purchases from other sources.
- Additional water quality field and modeling evaluations are necessary to refine project operations and circulation procedures for organic carbon, dissolved oxygen and temperature.
- Total long-term average annual water supply benefits provided by the Project under sample scenarios ranged from 124 to 136 TAF. Total average annual water supply benefits during dry periods ranged from 59 to 62 TAF.

Next Steps

- CALFED's ERP and storage programs should work closely with regulatory agencies to maximize the program benefits in the Delta and assure compliance of the Endangered Species Act.
- Future operations should be refined during consultations with regulatory agencies. The timing of environmental water allocations would be flexible depending on the specific environmental benefit to be achieved (e.g. protection of spring-run chinook salmon and delta smelt).
- Additional potential benefits of system operational flexibility, water quality improvements, systemwide carryover storage, contribution to D1641 requirements, storage for water transfers, flood damage reduction and recreation use should be quantified.
- Common Assumptions work should be advanced to apply similar regulations to all projects.